PROCEEDINGS OF THE NEW YORK ENTOMOLOGICAL SOCIETY

Meeting of October 5, 1948

A regular meeting of the Society was held October 5, 1948 in the American Museum of Natural History. President Dr. Hagan called the meeting to order at 8: 00 P. M. There were 12 members and five visitors present.

The field committee reported on the two Society outings of the past summer, held on the grounds of Mr. Chris Olsen at West Nyack, New York, and of Mr. Teale at Baldwin, Long Island, that were favored with good weather, and well attended. Mr. Olsen and Mr. Teale again proved themselves fine hosts. An informal talk on European entomology was presented by Olaf Ryberg of Sweden at the outing on Mr. Teale's grounds.

Dr. Hagan reported the resignation of the society treasurer, Dr. James C. King, which was forced by illness. He expressed the appreciation of the society for the time and effort so freely given by Dr. King in the performance of his duties as treasurer and instructed Mr. Pallister to draft a letter to Dr. King extending to him the well wishes of the society in his illness, and expressing the hope for early recovery. It was also announced that Mr. John C. Pallister had been appointed treasurer for the remainder of the year, and that Mr. Leonard J. Sanford would continue as assistant treasurer. The auditing committee presented a report, as of September 30, 1948, of the books of the former treasurer, that was adopted.

Mr. Teale called to the attention of the society the death of entomologist Phil Rau in St. Louis.

A letter was read by Mr. Pallister from a Gerhard A. Holzbauer of Stuttgart, Germany, addressed to the Museum, asking for correspondents on Lepidoptera.

Dr. James Forbes, chairman of the program committee, spoke on the results of his survey to determine the desires of the membership for a program of maximum interest and benefit. The president assured the program committee that it had a free hand in making the arrangements.

The meeting was then opened for general discussion of summer activities of the membership. Mr. Teale reported observing the herding of a treehopper (both adult and immature forms) by carpenter ants. He also observed an increase in the numbers of the native mantid *Stagmomantis carolina* around Baldwin, Long Island. He mentioned a trip he had taken to Oscoda County in Michigan to observe the Kirkland Warbler. He found this bird feeding its young on ant lions, which were very abundant. Mr. Teale also read several philosophical observations from the journal which the late William T. Davis had kept for some 50 years. The Staten Island Institute is publishing a biography of Mr. Davis.

Mr. Vishniac reported observing a black wasp of the genus *Astata* stocking its nests with pentatomids. He was surprised to find the paralyzed bugs

still alive after four weeks in the nests, since they live only a few days above ground.

Dr. Spieth made mention of his continuing work on the mating behavior of fruit flies.

Some further comments on armchair collecting were contributed by the members.

FRANK A. SORACI, *Secretary.*

MEETING OF OCTOBER 19, 1948

A regular meeting of the Society was held October 19, 1948 at the American Museum of Natural History. President Dr. Hagan called the meeting to order at 8:00 p. m. There were 16 members and 25 visitors present. The reading of the minutes of the previous meeting was dispensed with, so that the speaker of the evening, Dr. Ralph B. Swain, was able to proceed with his paper on "The Mormon Cricket." This paper, described the work of several years in studying the biology and habits of the insect, surveying damage, and devising and putting into practice control measures. The thorough study of this migratory long-horned grasshopper (*Anabrus simplex* Haldeman) was performed during 1938–1939, at the peak of the last major outbreak. Heroic measures were used at that time in the attempt to alleviate the depredations of the past. During the last 10 years poison baiting has replaced metal barriers and sodium arsenite dust, and an even greater advance can be expected with the advent of DDT and other new organic insecticides. Sound motion pictures of the project were shown.

FRANK A. SORACI, *Secretary.*

MEETING OF NOVEMBER 16, 1948

A regular meeting of the Society was held November 16, 1948, at the American Museum of Natural History. President Dr. Hagan presided. There were 12 members and 15 guests present.

Dr. Hagan spoke on the need of the Society for additional income, especially because of increased JOURNAL costs.

There being no further business, the speaker of the evening, Dr. T. Schneirla proceeded with his paper "Additional Observations on Army Ants (*Eciton* sp.)" an abstract of which follows:

In the continued studies of army ants on Barro Colorado Island, a new technique which proved to be valuable was the "marking" of the colonies by making a very small nick with iridectomy scissors in a given part of the edge of one of the queen's abodminal sclerites. About 20 *E. hamatum* colonies were thus marked, in a total of 32 colonies investigated; 12 *E. burchelli* colonies were marked in a total of 20 colonies studied on the Island. For example, our colony H-12 of *E. hamatum* was "let go" at Wheeler 20 on Nov. 23, after the queen had been marked; then on Dec. 24 after our return from Candelaria this colony was found at Shannon 3, and a valuable sample of eggs was obtained from a brood which developed into a sexual (male and fertile female) brood,—our first record for the year. Followed and studied until early February, colony H-12 gave us highly useful records on queen-production and colony division.

The facts concerning queen-production in the Ecitons were checked in the study of a number of colonies. We find the number of young queens matured to be very small, probably less than a dozen as a rule. They are fully developed in advance of the males, typically about three days, we find. This fact of female precocity proves to be very important for the process of colony division. Since the young queens are present as adults before the males begin to emerge from their cases, it is possible for sub-sectioning of the colony to occur on a chemical-attraction basis before emergence of males arouses the colony into a move from its statary bivouac site. We find that the ''old'' colony queen is likely to be present in one of the sub-sections which becomes a new colony, one of the young ''new'' queens in another; these move off divergently and thenceforth behave as new colonies. The other young queens, through an interesting behavior process in the workers, are ''sealed off'' and eventually are abandoned.

Much information was obtained which throws further light on the environmental conditions under which these ants form their ''bivouacs'' or temporary nests. Many ecological records were obtained from *Eciton* bivouac sites, in comparison with nearby control locations. These show that army-ant colonies are generally successful in approximating a highly ''stable environment'' as concerns temperature and humidity through the day. This fact explains the regularity of the nomadic-statary behavior rhythm in *Eciton* colonies, since the phases of this rhythm are conditioned upon the duration of developmental phases of the brood. If the colony environment were more variable, the brood-development process would vary more from case to case than we have found.

As a result of our findings, it is now clear that but one sexual brood (per colony) appears annually in the army ants, and that the pre-conditions of this brood are peculiar to the dry season. With further information about the timing of the one sexual brood per year and the conditions of its production, the implications of the army-ant situation for problems of caste- and sex-determination now become clearer. We find that the single sexual brood of 2,000–3,000 males and a dozen or less queen-type individuals is somehow produced by a functional queen which otherwise delivers very large all-worker broods at regular intervals throughout the year.

Additional developmental series of males were obtained from egg to callow alate, as well as queen developmental stages including prepupal and pupal forms. Our Bouin-fixed material from BCI and from Darien opens the possibility for further investigations on these little-known individuals, and particularly on the reproductive tissues of the queen, both as to their development in the embryo and their function in the adult.

FRANK A. SORACI, *Secretary.*

MEETING OF DECEMBER 7, 1948

A regular meeting of the Society was held in the American Museum of Natural History, December 7, 1948, at 8: 15 p.m. About 25 members and guests were present.

Dr. Olaf Ryberg, eminent Swedish entomologist, spoke on the Biology and Metamorphosis of Bat-Flies (Nycteribidæ). This family belongs to the group Pupipara of the Diptera; they are wingless, spider-like, blood-sucking flies, parasitic on bats, and give birth to full grown larvæ which are ready to pupate. There are about 2,000 species of bats and about 100 species of bat-flies. The family is comparatively rare in the United States, where there are more of another family in the same group, also parasitic on bats, the Streblidæ. Dr. Ryberg showed slides depicting the metamorphosis of

several species of Nycteribidæ and gave interesting details of their habits and morphology.

Dr. Ryberg concluded with comments on entomology and entomologists in the Scandinavian countries.

PATRICIA VAURIE, *Asst. Sec'y.*

MEETING OF DECEMBER 21, 1948

A regular meeting of the Society was held December 21 at 8: 10 p.m., in the American Museum of Natural History. Twenty-two members and guests were present.

In the absence of the secretary, the minutes of the previous meeting were dispensed with. The president, Dr. Hagan, appointed an auditing committee composed of Dr. Gertsch, chairman, Mrs. Vaurie and Dr. Schneirla. A nominating committee, appointed at the previous meeting, was announced as consisting of Mr. Schwarz, chairman, Dr. Klots and Mrs. Vaurie.

The speaker of the evening was Mr. David Bigelow, whose subject was "Collecting and Rearing Larvae of Saturnid and Sphingid Moths." Mr. Bigelow told of his collecting in Oyster Bay, New York, and in other localities, with hints on how to find the larvæ. He was especially interested in a survey of the food plants and the frequency of parasitism. He had transformed his back porch in Oyster Bay into a huge breeding cage. Slides were shown of many of the larvæ.

PATRICIA VAURIE, *Asst. Sec'y.*

MEETING OF JANUARY 4, 1949

An annual meeting of the Society was held January 4, 1949 in the American Museum of Natural History. President Dr. Hagan called the meeting to order at 8: 00 P. M. There were 21 members and six guests present. The minutes of the meetings of December 21, 1948, December 7, 1948 and November 16, 1948 were approved as read. The minutes of the Executive Committee of November 16, 1948 were also read.

The president then asked for committee reports. The report of the treasurer was read by Dr. Schneirla. The Auditing Committee reported that the books had been examined and found in order. These reports were adopted.

The Program Committee reported that it hopes to arrange a photography exhibit for a May meeting, and that programs had been arranged through February.

The Field Committee reported that Mr. Olsen's grounds would probably not be available for future field trips.

Mr. David M. Bigelow, Architecture Department, American Museum of Natural History, was welcomed back to active membership.

Mr. Arthur Roensch, 1350 Fulton Ave., Bronx 56, New York, was elected to active membership.

The Nominating Committee submitted its report which was adopted and the following officers were elected.

President	Dr. Theodore Schneirla
Vice-President	Dr. James Forbes
Secretary	Frank A. Soraci
Asst. Secretary	Mrs. Patricia Vaurie
Treasurer	David M. Bigelow
Asst. Treasurer	Dr. Lucy W. Clausen
Editor	Harry B. Weiss

Trustees

Dr. Mont E. Cazier
Dr. Harold R. Hagan
E. Irving Huntington
Dr. T. C. Schneirla
E. W. Teale

Publication Committee

Harry B. Weiss
John D. Sherman, Jr.
Edwin Way Teale

Doctor Hagan then thanked the officers and membership for their co-operation throughout his term of office, and turned over the chair to the incoming president.

There being no further business the meeting adjourned in order to do justice to the refreshments of coffee and cookies served by the Program Committee.

FRANK A. SORACI, *Secretary.*

MEETING OF JANUARY 18, 1949

A regular meeting of the Society was held January 18, 1949 at the American Museum of Natural History. The president, Dr. Schneirla called the meeting to order at 8:00 P. M. There were 14 members and 18 guests present.

Doctor Schneirla made mention of the need of the Society for funds, reporting briefly on the meeting of the Executive Committee, earlier in the day. The secretary then read the resolution recommended for passage by the Executive Committee.

> "Be it resolved that the annual dues for membership be raised from $3.00 to $4.00, making the total cost of membership and Journal $6.00 annually."

Notice of the resolution was to be given by mail, to the membership; the resolution to be voted at the regular meeting of the Society on February 15, 1949.

The following action of the Executive Committee was also read:

> "It was moved, seconded and approved that the price of the Journal be raised to $5.00 per volume, net to the Society, for all new subscriptions

starting February 1, 1949, and for all except member subscriptions beginning with Vol. 58 (1950).''

The speaker of the evening, Dr. Henry Svenson, then presented his talk on ''Insect Hosts of the New York Region.'' He was especially interested in the Lepidoptera of this region, and spoke of the plant hosts of many of the more common, spectacular forms. A large number of aged, but well preserved specimens of the various plants was shown.

FRANK A. SORACI, *Secretary.*

MEETING OF FEBRUARY 1, 1949

A regular meeting of the Society was held February 1, 1949 in the American Museum of Natural History. In the absence of the president, the vice-president, Dr. James Forbes was in the chair. He called the meeting to order at 8: 00 P. M. There were 16 members and 55 visitors present.

Mr. Lucien Pohl, 215 West 83rd Street, New York City, was proposed for active membership by William P. Comstock and elected under suspension of the rules.

Mr. Teale made a correction of the minutes of the meeting of October 7, 1947. Whereas, he was reported to have observed bats attracted to the green light of a neon sign, ignoring that portion of the same sign emitting a red glow, he stated that actually insects were attracted in large numbers to the green light and that apparently the bats were attracted to the insects.

It was moved by Mr. Teale, seconded by Mr. Schwarz and approved that the by-laws of the Society be amended to include an associate editor as an officer of the Society.

There being no further business, Dr. Forbes introduced Mr. Irving Huntington, speaker of the evening, who talked on the subject, ''The Grand Canyon.'' The location, size and history of the canyon were described. Its three national parks: Grand Canyon, Zion, and Bryce, were discussed. The merits of the south and north rims, thirteen miles apart as the crow flies, and 230 miles separated by automobile, were given. The talk was well illustrated with a series of outstanding color slides.

FRANK A. SORACI, *Secretary.*

MEETING OF FEBRUARY 15, 1949

A regular meeting of the Society was held February 15, 1949 at the American Museum of Natural History. President Dr. Schneirla called the meeting to order at 8: 00 P. M. There were 15 members and 16 visitors. The president acknowledged with thanks the receipt of $50 in voluntary contributions from several members. He also reported the appointment of Mr. Soraci as associate editor, stating that the help that will be provided the editor by this new appointment is long overdue.

Dr. Schneirla also reported that Mr. Teale has been receiving encouraging response to his solicitations for advertising in the JOURNAL. Entomological supply houses have shown definite interest.

Dr. Forbes reminded the membership that the second meeting in May will be one of photographic exhibits, and that its success will depend upon the co-operation of our photographers.

It was announced that Dr. Carl Von Frisch would give three lectures at the American Museum of Natural History early in April, on the "Visual, Chemical and Language Senses in Bees." It was likely that the April 5 meeting of this Society would be turned over to one of his lectures.

The following were proposed for membership:

Bernard Heineman, Jr., 175 West 72nd Street, New York City.

Charles Pomerantz, 20 Hudson Street, New York.

Prof. Ashur E. Treat, 137 Amsterdam Avenue, New York 31, N. Y.

Upon certification by the secretary of the presence of a quorum a vote was taken on the resolution pertaining to dues as presented to the Society at the January 18 meeting.

It was moved by Mr. George Becker, seconded by Doctor Cazier, and passed unanimously that the by-laws of the Society be amended as follows:

Article VII (dues) of the by-laws shall be changed to read: "The dues of active members shall be four dollars ($4.00), per annum, payable in advance on the first day of January of each year." The rest of article VII remains unchanged.

Dr. C. H. Curran, speaker of the evening, was then introduced by the Chairman of the Program Committee. His topic "Some Aspects of Insect Control" touched on his work in the control of house flies and mosquitoes at the Bear Mountain Inn, beginning in 1944. He spoke of his early work with DDT stressing its use as a residual insecticide. The use of this material in aerosols should be discouraged because of possible harmful effects to man. Space spraying, as practiced with the older insecticides is not prescribed for DDT.

Frank A. Soraci, *Secretary.*

Meeting of March 1, 1949

A regular meeting of the Society was held March 1, 1949 at the American Museum of Natural History. President Dr. Schneirla called the meeting to order at 8: 10 P. M. Seventeen members and 11 guests were present.

Dr. Forbes asked that anyone with photographs, to submit for the second meeting in May, get in touch with him or the other members of the committee, Mr. Vishniac or Doctor Clausen, as the committee must have the photographs by the end of April or the first of May.

The three people proposed for membership at the last meeting were elected to membership, Bernard Heineman, Jr., 245 Church Street, New York City (business), 175 West 72nd Street, New York City; Charles Pomerantz, Bell Extension Company, Incorporated, 20 Hudson Street, New York City, and Prof. Ashur E. Treat, City College of New York, 137th Street & Amsterdam Avenue, New York City 31, New York.

Dr. Swain announced that the membership committee was eager for sug-

gestions to promote members getting better acquainted. He proposed, and the suggestion was followed upon, that each person present give his name and official connection or special interest.

Dr. Forbes introduced the speaker of the evening, Mr. Henry Fleming, who spoke on "Ecology of Northern Venezuela." Mr. Fleming made a plea for more accurate locality labels for insects, saying that a difference of a few miles often made a big difference in rainfall, thus quite changing the type of habitat. Mr. Fleming spoke of the various areas of northern Venezuela, the eastern part, which has a fauna related to that of British Guiana, the xerophytic regions along the coast, the deciduous zone, the semi-deciduous, which latter seemed most prolific of insects, the cloud forests, and the high llanos area. He found the greatest variety of insects in the high mountain region which included Rancho Grande and the City of Caracas.

PATRICIA VAURIE, *Asst. Sec'y.*

MEETING OF MARCH 15, 1949

A regular meeting of the Society was held March 15, 1949 at the American Museum of Natural History. President Dr. Schneirla called the meeting to order at 8: 00 P. M. There were 15 members and nine visitors present.

Dr. Schneirla called on Mr. Teale to report on his investigations of the possibility of procuring advertising for the JOURNAL. Mr. Teale said that after interviewing several prospects, he was quite sure the SOCIETY would have no trouble in obtaining this support for its JOURNAL. It was his opinion that the effort of the previous year was not successful because soliciting was by mail. He stressed the need for personal calls on prospects. Dr. Schneirla thanked him, for the SOCIETY, for his efforts in the matter.

Mr. Comstock remarked that JOURNAL costs might be cut by use of the offset printing process. The president thanked him for his suggestion and asked that the associate editor look into this possibility.

The program committee announced its plans for the attendance of the SOCIETY at the von Frisch lecture on April 5. It was approved that the SOCIETY hold its "regular meeting" of that night with the scientific staff of the museum at the von Frisch lecture in the auditorium.

There being no further business, Dr. James Forbes, chairman of the program committee introduced Dr. Herman Spieth, speaker of the evening, who spoke on the "Mating Behavior of *Drosophila pseudoobscura* and its Relatives." This work was undertaken in the hope that it might throw some light on evolution in the group. The *willistoni* group could not be used because inter-specific breeding does not occur in that group. The courtship and mating behavior of eight species of the *obscura* and *affinis subgroups* were described. Antennal tapping and posturing by the male are important features of the courtship. As the male postures, the female indicates acceptance or rejection in various ways. Dr. Spieth found that species that interbreed have similar mating behavior.

FRANK A. SORACI, *Secretary.*

Meeting of April 5, 1949

The regular meeting of the Society for April 5, 1949, was adjourned to the main auditorium of the American Museum of Natural History, so that the membership could hear the lecture of Dr. Karl von Frisch, visiting European entomologist, who spoke on his work with "The Chemical Senses (Taste and Smell) of Bees."

Frank A. Soraci, *Secretary.*

Meeting of April 19, 1949

A regular meeting of the Society was held April 19, 1949 in the American Museum of Natural History. President Dr. Schneirla called the meeting to order at 8: 00 P. M. There were 14 members and 13 visitors present. The treasurer, Mr. Bigelow, mentioned that he had submitted a report to the Executive Committee at a meeting on that day, and that the Society might be able to operate within its income for this year.

The chairman of the Program Committee asked for volunteers to assist in arranging the photographs to be exhibited at the regular meeting on May 17, 1949.

Mr. Teale reported that volunteers were needed to solicit advertising for the Journal. The cost of advertisements was announced as $100 per full page per volume; $55 per half page and $30 per ¼ page; to appear in four consecutive issues.

There being no further business, the speaker of the evening, Prof. Franz Schrader of Dept. of Zoology, of Columbia University was then introduced. He spoke on "The Special Developments in the Reproductive Organs of Tropical Pentatomids."

Cytologically, the Hemiptera have been more thoroughly investigated than any other animals or plants. Of the Hemiptera, the family Pentatomidæ has been the one most frequently studied. The chromosome condition is very uniform among known representatives in the temperate zone. Approximately 120 species have been investigated and 110 of these are uniform. Commonly the male chromosome make up is $12+X+Y$, dividing so that the sperm becomes $6+X$ and $6+Y$. In fertilization the joining of $6+X$ with $6+X$, gives $12+2X$, producing a female. The male results from a $6+X$ and $6+Y$ fertilization, producing $12+X+Y$.

Practically all the work on the Pentatomids has been done with North American and European species. And representatives of the family can be considered genetically stable. Yet, in other areas, such as South America and Central America they are decidedly not stable.

Males of some Pentatomids have "harlequin" lobes in the testes, the cells of which contain irregular numbers of chromosomes. As example, some are $2+X+Y$, $3+X+Y$, $4+X+Y$ and up to $11+X+Y$. It is likely that sperm having other than $6+$ the sex chromosomes are not as efficient as the standard sperm. When an individual is found with other than $12+$ sex chromosomes, the individual is abnormal and a new form is produced.

In the Hemiptera, harlequin lobes are found only in the Pentatomidæ.

They are common in some tribes, being rare or unknown in others. No northern Pentatomids have harlequin lobes, yet 20 of 50 spp. Professor Schrader has seen from Mexico, south, have such lobes.

The preponderance of spp. of the Pentatomidæ occur from Mexico southward. Harlequin lobes are tropical in occurrence, but there is a lack of taxonomic and other data from South America as well as other places. Professor Schrader suggested that entomologists should converge on such areas to obtain the necessary information, but also expressed his opinion that the financial consideration has probably been responsible for the meager work to date.

F. A. SORACI, *Secretary.*

MEETING OF MAY 3, 1949

A regular meeting of the Society was held May 3, 1949 in the American Museum of Natural History. The president, Dr. Schneirla, called the meeting to order at 8:00 P. M. There were 11 members and seven visitors present.

Dr. Lee Ling, plant pathologist with F A O, located at Washington, D. C., and Dr. Archer of the Geological Survey of Alabama, at the University of Alabama in Tuscaloosa were introduced and made welcome by the president.

Dr. James Forbes, assistant professor of Embryology at Fordham University, speaker of the evening, was introduced by Dr. Lucy Clausen. He spoke on the subject "Some Insects of New Guinea."

This island, second in size only to Greenland, is 1,500 miles long by 400 miles wide at its widest point. It is divided into three parts, (1) Dutch territory, (2) Australian territory, and (3) Australian mandated territory. Dr. Forbes served with a malaria survey detachment during World War II. The detachment collected 55 spp. of mosquitoes representing the genera *Anopheles, Bironella, Culex, Aëdes, Armigeres, Uranotaenia, Mansonia, Harpagomyia, Megarhinus* and *Tripteroides.* He travelled from Milne Bay to Oro Bay to Biak, then to Hollandia.

The mosquitoes of importance as carriers of human malaria were *Anopheles punctulatus* and *A. farauti.* The former was prevalent in clay soils. Its eggs hatch in two and one-half days; the larvæ are very active, pupating in six to 11 days. The latter species breeds in sandy soil; its eggs hatching in three and one-half days; the sluggish larvæ mature in seven to 18 days. The malaria incidence in South New Guinea ranges from 50 per cent to 98 per cent. On Biak the incidence is only 10 per cent.

Aëdes (*Stegomyia*) *scutellaris,* one of the Dengue fever carriers, also was taken in abundance.

At Hollandia night blood surveys resulted in finding 30 per cent of the natives positive for filariasis, another mosquito-borne disease.

Some interesting slides were shown, and after a question period the meeting was adjourned at 9:30 P. M.

F. A. SORACI, *Secretary.*

Meeting of May 17, 1949

A regular meeting of the Society was held at the American Museum of Natural History. The meeting was called to order by Dr. Schneirla at 8: 10 P. M. About 40 members and guests were present.

It was mentioned that the Society's annual summer outing will probably take place in late August or early September, but that members would be notified by mail.

Dr. Schneirla called the attention of the Society to the citation given to Mr. Weiss by the New Jersey Agricultural Society and copies of the citation were passed around.

The talk of the evening, "Photographic Problems and Techiques," was given by Dr. Lucy W. Clausen, Mr. Roman Vishniac, and Mr. Ellwood Logan. Mr. Vishniac talked on his preference for taking pictures of the live insect only, a technique which calls for much patience and a certain philosophic approach to the insect. He showed the equipment he used and explained some of the problems of light, exposure, etc. Mr. Logan, whose job at the American Museum is usually the taking of dead insects' pictures, spoke on the advantages of this technique over the other. Doctor Clausen showed the camera she used and why she preferred it. A showing of kodachromes of the members followed, after which the Society adjourned to the first floor to see the exhibit of entomological photographs there displayed.

Patricia Vaurie, *Asst. Sec'y.*